

**Kraskin Invitational
Skeffington Symposium
on Vision**

January 18-20, 2020

and

January 16-18, 2021

The Tao of Vision Training

Steve Gallop, OD

Basic assumptions:

- The primary purpose of the visual process is to direct action.
- Development, movement and the visual process are intimately and critically intertwined.
- The totality of the visual process is engaged and on display during every training (and testing) procedure.
- I am not treating symptoms or diagnoses or training skills. I am trying to enhance comfort, performance and development of the visual process.
- Lenses are an important aspect of the therapy process, in the therapy environment and/or as prescribed for more frequent use.
- Modifying habitual lenses is generally an important first step in the therapy process.
- Judicious use of occlusion is an invaluable aspect of visual training.
- It is important to resist letting a particular diagnosis exert undue influence over the therapy process.
- One of our greatest gifts is presenting people with options.

My Training Room



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What is Vision Therapy

A program of lenses and activities designed to help train the brain to use the eyes more efficiently.

What is Vision Therapy

A program of lenses and activities designed to help train the brain to use the eyes more efficiently for the purpose of more efficiently and effectively directing action.

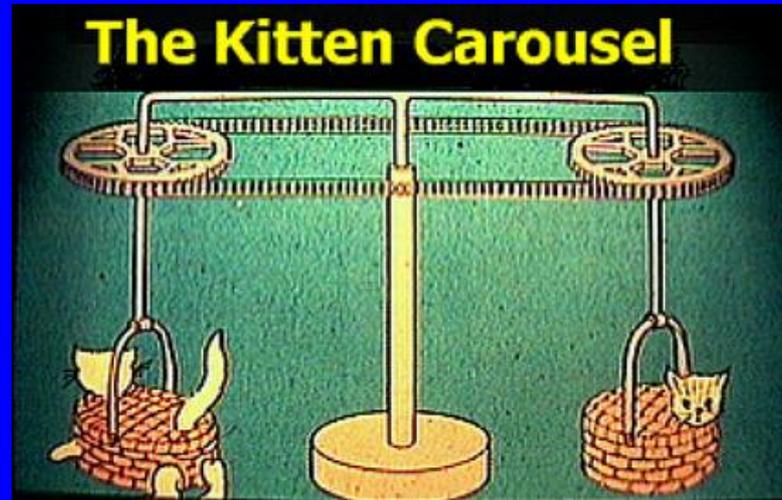
“Seeing is motor.”



Renshaw and his tachistoscope

Samuel Renshaw

The "Kitten Carousel" Experiment (Held & Hein, 1963)



The objective of this study was to investigate the role of experience in perceptual-motor development. Kittens were kept in the dark for a period of eight weeks from birth except for an hour per day when they were kept in a 'Kitten Carousel'. The kittens were given appropriate names. 'Passive Kitten' and 'Active Kitten' were their names. The Active Kitten was given the ability to move freely at its own discretion when in the kitten carousel. As he propelled himself through space, visual experience tied to his motions occurred. The Passive Kitten received an equal amount of visual experience but these experiences were not related to movements the Passive kitten made. Both Kittens were later released into the light. The Passive Kitten showed no evidence of perceiving depth. The Active Kitten was indistinguishable from normally raised kittens.

The primary purpose of the visual process is to direct action...

According to Karl Pribram (from *languages of the brain*) ...

“..a sort of Imaging process must occur in the motor cortex and that the Image is a momentary Image-of-Achievement which contains all input and outcome information necessary to the next step of that achievement.” (p.243)

“This Image-of-Achievement, therefore, encodes environmental contingencies (e.g. forces), not patterns of muscle contraction.” (p.251)

Why the primary purpose of the visual process is to direct action...

According to Neuroscientist Daniel Wolpert...

We have a brain “for one reason and one reason only — and that’s to **produce** adaptable and complex **movements**.”

From TED talk: *The real reason for brains*

Alain Berthoz

“The brain is not a reactive machine; it is a proactive machine that investigates the world.”

from *The Brain's Sense of Movement* (translated by Giselle Weiss)

“The brain is not a machine that responds to external stimuli but a machine that formulates hypotheses based upon internally generated simulations of action.”

Alain Berthoz

"...the basis of our thoughts, from the development of our highest cognitive functions, even the most abstract, lies in action...our brain evolved to anticipate the consequences of an action, projecting onto the world its preperceptions, hypotheses, and interpretative schemas."

from *Simplexity: Simplifying Principles for a Complex World* (translated by Giselle Weiss)

What is Vision Therapy?

The primary purpose of vision therapy is to provide an environment of consistent, known conditions within which a person can use the visual process, observe (consciously and otherwise) the way they use the visual process, and begin to modify the process. It also allows the therapist to better understand how that person uses their visual process, when appropriate engage in dialogue, and determine how best to adjust and apply the therapy going forward.

What is Vision Therapy?

A program of lenses and activities designed to help train the brain to use the eyes more efficiently.

Why is Vision Therapy?

- Comfort
- Performance
- Development
- Enhancement
- Myopia prevention/control/reduction

Something to think about...

Optimal acuity should be thought of more as a result of a well-functioning visual process, not a prerequisite. I have found that vision therapy often leads to improved distance acuity. I think this is because the person becomes able to make better use of the available information as the visual process becomes more sophisticated and effective as a result of vision therapy and/or a more strategic, dynamic use of lenses.

Vision Therapy and Lenses

- Lenses change the instructions/feedback to the brain.
- Plus at near is essential to visual hygiene and stress-free visual development
- If you manage the near-point, the distance will follow.
- The habitual Rx is likely to be, at best, a hindrance.

Why are lenses important?

Lenses change the instructions and feedback to the brain. When confronted with any lens the brain must adjust its processing and output based on the modified input resulting from the transformation of light initiated by the lens. This is true for plus, minus, cylinder and prism. This is true for therapeutic lenses as well as compensatory lenses.

“If the embedded visual behavior is to be superseded by improved performance, through the process of training, the cylinders may well be a deterrent.”

A.M. Skeffington

(from Practical Applied Optometry)

Vision Therapy Equipment



Instructional Sets

Instructions for any given procedure are designed to provide that which is necessary and sufficient to carry out the task. Then, as the saying goes – Just Look. It is often interesting to see how the person modifies the instructions in order to succeed in the task on *their* terms.

Instructional Sets

It is not at all unusual for people to hear what they want, or to change the instructions in order to suit their perceived needs, and the way they interpret what they think we want.

How Many VT Procedures Can Dance on the Head of a Pin?

There is an almost infinite number of VT procedures and many ways to apply each of them.

What works dramatically for one therapist might not work at all for another. What works for one patient might not work very well or possibly at all for another.

How Many VT Procedures Can Dance on the Head of a Pin?

I have found that it is not necessary to have hundreds or even dozens of procedures. Find a relatively small assortment and stick with them.

We want the patients to be the ones figuring things out, not the therapist.

What is the best procedure for Condition X?

It is best not to think in terms of the particular condition. Focus on the person, their needs, concerns and where they are at the moment.

The visual process is active and on display at all times, during every test and every therapy procedure.

Me: What is the purpose of this procedure?



Kraskin: It's just another way to access, observe and stimulate the visual process.

Words to the worried

My job is to make this a safe place for you to make mistakes. Your job is to make as many mistakes as you need to figure out how to improve what you are doing.

Gregory Kitchener, OD

Words to the therapist

It is important that we not let our biases regarding what we assume a person might be capable of, limit where we allow them to go.

Try to avoid putting limitations on what you think someone is capable of until they demonstrate the limitations themselves.

Vision Therapy and Homework

- More often than not it wasn't getting done and patients expressed guilt
- Most of my patients already have enough on their plates
- Home activities carry a significant risk of having the person do new activities using the old patterns
- Vision therapy is more about process than product
- Parents are not always the best 'therapists'

Managing infrastructure



Patient doing home VT on the computer



So...

I rarely give homework (in the traditional sense) as part of my vision therapy program.

Unless...

you accept the premise that wearing counter-stress/near lenses is homework.

Here's what a patient said, unsolicited:

I am still trying to figure out why vision therapy has affected my ability to perceive and utilize color. I recently started a new round of vision therapy "tune up" sessions and discovered even more surprising things.

*I restarted therapy after a long absence – longer than intended. I was supposed to come in for assessment and maintenance sessions, but life intrudes on the best laid plans, and I went a whole year without therapy. **I expected that testing would show a little slippage in my acuity and functionality.** If you don't do any exercise for a while, the muscles get slack, and I assumed the eyes are not an exception... I had improved. **My vision had continued to improve, even though I had discontinued therapy.***

Here's what a patient said, unsolicited:

*Robert Mitchum once said the only you need to know about acting is "remember your lines and don't bump into the furniture." It's a good thing I didn't want to be an actor before vision therapy, because as long as I can remember, I've been bumping into things, knocking things over, and spilling my drinks. As a result of vision therapy I don't bump into things anymore. Pre-therapy, I constantly had bruises on my hips from hitting doorknobs as I went by, and bumping tables and counters (which are at just the right height on me to make a nice whack). **"No more bruises on the hips" might not be the kind of selling point you bullet in promotional materials, but it indicates a profound change in the way I relate to space. Vision therapy trained my brain to map the world around me and my position in it much more accurately.***

Here's what a patient said, unsolicited:

*This translated into another ability: **I can turn now in dance classes.** I take dance classes in lieu of actual exercise. I could never turn before, not even the easy, baby-dancer turns, let alone faster, more complex moves. As soon as I started to spin, I lost track of the room, my position on the floor, and my balance. A single turn caused dizziness. Now my sense of where I am and how I am oriented stays intact. And I can do the basic turns well enough not to embarrass myself, and that's an improvement. While not bumping into things feels like better mapping skills, being able to turn feels more like not dissolving into entropy. **Vision therapy has improved my ability to maintain my internal sense of equilibrium even while turning. The same thing used to happen to some degree while parallel parking as when I was turning – I would lose my sense of where I was in the world. This has also improved as a result of vision therapy.***



Thank you.

Steve Gallop, OD

Visit us at GallopIntoVision.com

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